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Evidence based medicinal value of an organic extract of red onion peels

Atallah F Ahmed
King Saud University, Saudi Arabia

As a part of our research devoted to the utilization of agro and food industrial wastes as a source of medicines and phytopharmaceuticals, recovery and bioactivity evaluation of phenolic-rich hydro-acetone extract from red onion (*Allium cepa* L.) peels (ACPE) will be reported. The NMR analyses of the isolated compounds identified known flavonoids and phenolic acids in ACPE. Total phenol content and antioxidant capacity, estimated by Folin-Ciocalteu and DPPH radical assays, were found to be 72.33±5.30 mg gallic acid equivalent (mg GAE)/g and IC50 13.8 µg/mL (ref. rutin: 5.2 µg/mL), respectively. On the basis of high phenolic and antioxidant capacity of ACPE, the evaluation of hepatorenal protective activity was thus carried out using CCl_4–induced toxicity model in rats. Results of measurements of various serum and hepatorenal biochemical markers demonstrated that ACPE possess a considerable protective potential against CCl_4-induced liver and kidney injury at 100 mg/kg/rat. In another study, ACPE showed a concentration-dependent relaxation in isolated rabbit jejunum preparations of spontaneous and high K^+-induced contractions equipotentially, nearly similar to that caused by papaverine; and suppressed the carbachol-induced bronchoconstriction in normotensive anesthetized rats similar to the effect observed with aminophylline. The results indicated that the spasmolytic and bronchodilatory effects of ACPE are partially mediated through inhibition of calcium channel and phosphodiesterase enzyme like-mechanisms. The above findings represented an evidence-based medicinal value to red onion peel, as a cheap dietary supplement where it may enhance the recovery from xenobiotics-induced toxicity initiated by free radicals and gastrointestinal and respiratory disorders, e.g. diarrhea and asthma.

Biography

Atallah F Ahmed earned his PhD at Okayama University, Okayama, Japan (1993) and pursued his postdoctoral studies at Sun Yat-sen University, Kaohsiung, Taiwan (2001-2006). He spent most of his career at Mansoura University, Egypt before getting hired as a Professor of Pharmacognosy and Natural Product Chemistry to join King Saud University, Saudi Arabia at 2010. He has published more than 50 papers, in the field of herbal and marine natural products and evidence-based herbal medicine. In reputed journals he has been serving as a reviewer for research projects funded by King Abdulaziz University and King Abdulaziz City for science and technology.

afahmed@ksu.edu.sa